

**Activity Title:** Marine/Science Careers Exploration

**Subject (Focus/Topic):** Careers in Marine Science, NOAA Corps Officer & Mariner

**Grade Level:** 6, 7, 8

**Average Learning Time:** (3) 50 minute class periods

**Lesson Summary (Overview/Purpose):** The web-based lesson activity allows students to explore various careers aboard a NOAA research vessel through the photos and career biographies completed by ship officers, crew and guest science team members.

**Overall Concept (Big Idea/Essential Question):**

What skills and experience are needed for a career as a marine scientist, NOAA corps officer or mariner?

**Specific Concepts (Key Concepts):**

Benefits of college degree to obtain employment

Importance of interpersonal skills such as working with others and communicating results

Stimulate students' thinking about future career possibilities and the steps needed to reach this goal

**Focus Questions (Specific Questions):**

1. What skills and experience does a marine scientist or NOAA Corps officer need to be successful in their career?
2. What are the benefits and challenges of working in a marine career?
3. Is a career working in marine science or as a mariner of interest to me? If not, what other careers would be interesting?
4. How do the tasks students in a middle school science class compare to the skills demonstrated by marine scientists, NOAA Corps officers and mariners?

**Objectives/Learning Goals:**

- Given a sample career biography, the students will be able to describe the general duties of the job and identify the education needed to obtain a similar position. Students will also be able to identify the challenges and joys of working in this particular position and how it compares to their own career interests.

**Background Information:**

All of the information is hosted at: <http://marinesciencecareers.weebly.com> Students will need to be familiar with navigating a web page and open a PDF file. Using the back arrow to exit the PDF file will avoid closing the web site.

Students will need some help with technical vocabulary. One tab on the web page is devoted to the specialized terms they may encounter in some of the biographies however they will likely need to access definitions provided in another resource.

Students should know the difference between NOAA Corps officers (commissioned officers) and the crew (non-commissioned, civilian employees) who are needed to carry out the many tasks to operate a research vessel. Marine scientists are employed by NOAA but also by other agencies such as Florida Fish and Wildlife Commission.

Students can get distracted by the photos and end up short on time to complete the faces of the career cube activity sheet. Monitor efficiency of their use of time.

### **Common Misconceptions/Preconceptions:**

- Students may not realize that interpersonal skills are just as important in a career choice as the technical skills necessary for a particular job. The ability to work with others, be flexible and have a willingness to learn were cited most often by the respondents as necessary to be successful in their work.
- Communication skills in writing and public presentation and ability to use Math are also important for the NOAA Corps officers as well as the scientists.
- Students may have voiced that the information they are learning in science class will not be important in their future occupation. This cannot be known. As evidence some of the members of the crew that were interviewed (unfortunately they did not complete the career questionnaire) had actually pursued other careers as a teacher and as a car mechanic before realizing a desire to return to school and earn the degrees needed to work for NOAA. This included a NOAA Corps officer and the lead scientist.
- Scientists work in alone and in a laboratory setting.

### **Materials:**

Photocopies of the Career Cube. You can assign the cube to an individual or to pairs of students.

Scissors and glue or tape to assemble the cube.

Dictionaries - or access to a digital dictionary to allow better understanding of some unfamiliar words used by the respondents of the questionnaires.

ELMO or Projector – or ability to demonstrate to students how to navigate the web page and perhaps show the short introduction video to the class as a group. (optional)

### **Technical Requirements:**

Access to computer or other digital technology with Internet access for each student or pairs of students.

## **Teacher Preparation:**

1. Before teaching the lesson, peruse the first 4 tabs of the web page to become familiar with the content and organization of the information. This will also prepare you for some of the questions students may have. Some of the non-technical vocabulary may be unfamiliar to students in the 6-8 grade bands such as “collateral duties” or “artisanal fisheries.”
2. Test that this project web page loads properly on your school computers before students arrive.
3. Make the required number of copies of the career cubes. Also decide if you will be pairing students or if they will work alone.

## **Keywords:**

**NOAA-** National Oceanic and Atmospheric Administration

**Mariner**

**Corps Officer**

**Additional key words are listed on a separate tab on the website and include definitions**

## **Pre-assessment Strategy/Anticipatory Set (Optional):**

A pre & post-test about NOAA careers are imbedded in the web activity

## **Lesson Procedure:**

Note: This lesson is taught over 2-3 class meetings. You will need to adjust the timeline to meet your own students’ learning style. Natural breaks in the lesson are indicated. If you find you have extra time in class students could explore 2 career biographies and complete the career cube on only one which they will present. Alternatively you could assign careers to explore to pairs of students so that all career options are presented in the final class meeting.

### Engagement:

Use the Focus Questions listed above to activate students thinking about the career possibilities with NOAA. Introduce the web page as a resource to answer these questions by providing the website address: <http://marinesciencecareers.weebly.com>.

### Exploration:

Students read or view the introduction video

Students take the pre-test.

Students peruse the listed careers and select one to focus on. They would read the career biography in the PDF file of their choice. (End of day 1 lesson, students could explore the career biographies from home)

#### Explanation:

As they complete their reading, distribute the Career Cube sheets. Students will likely need to return to the document to fill in the information on the cube. After the cube is complete they can cut it out and assemble the shape.

In small groups they can share the information on the cube in a short oral presentation. Ideally students in each group will have focused on different career biographies and so be able to learn about other career options. (End of the lesson on day 2; students would practice their presentations as homework)

#### Elaboration:

As students present in small groups, ask them to discuss how the tasks students in a middle school science class compare to the skills demonstrated by marine scientists, NOAA Corps officers and mariners?

Ask the small groups to share their responses in a whole group discussion that closes the activity.

Career Cubes can be displayed in the classroom or library for other students to interact with.

### **Assessment and Evaluation:**

Administer the pre-test found on the web page (second tab). It is written in Google docs so that student responses can be compiled and compared to the post-test at the end of the lesson. Although the pre/post tests are anonymous the overall understanding of the group can be assessed.

### **Standards:**

Helping students become career and college ready is the inherent goal of all educational efforts although it is never stated in specific terms in the standards. Providing opportunities for students to explore their future career options and make connections to the value of their classroom experiences will facilitate this process.

### **Additional Resources:**

Refer to Additional Resources tab at the website so that students can learn about a variety of careers beyond marine science. Another tab includes resources specifically for teacher use.

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# Career CUBE

Name \_\_\_\_\_

Date \_\_\_\_\_

Period \_\_\_\_\_

\$ \_\_\_\_\_

Calculate the  
Average  
monthly  
earnings

Job title

What are the  
challenges of this career?

Education Experience

List 2 skills this  
person believes are

1.

2.

What do they love  
about their work?

1. Preview all of the NOAA, marine science and support staff careers listed at: [marinesciencecareers.weebly.com](http://marinesciencecareers.weebly.com). Choose one career that interests you. Open the PDF file to learn the details of their career experience.
2. As you read watch for the information requested on the cube. Complete every blank
3. Cut out and assemble the cube.
4. Use the cube information to present what you learned about this career.

